

What is claimed is:

1. A base module for a filter assembly comprising:
 - a body defining a receptacle for receiving a filter cartridge and a central axial opening surrounded by a coaxial lip;
 - a mounting bracket extending from said body for mounting said base module to a vehicle;
 - a communication module receivable in said body central axial opening at a plurality of angular orientations to said body, said communication module including a skirt which mates with said lip, an inlet conduit extending axially into said receptacle, a corresponding inlet fitting defining a fluid passageway extending away from said receptacle and an outlet fitting defining a fluid passageway extending away from said receptacle,
 - wherein said communication module is received in said body and fixed to said body to form said base module.
2. The base module of claim 1, wherein said annular skirt projects axially toward said receptacle and said annular lip projects axially away from said receptacle.
3. The base module of claim 2, wherein said communication module skirt fits closely over said body annular lip forming a joint.
4. The base module of claim 3, wherein said joint includes an annular sealing grommet disposed between said skirt and said lip.
5. The base module of claim 1, wherein said communication module is joined to said body by an ultrasonic weld.

6. The base module of claim 1, wherein said communication module defines an axis and said inlet and outlet fittings have axes which are not coaxial with said module axis.

7. The base module of claim 6, wherein the axes of said inlet and outlet fittings are substantially perpendicular to said module axis.

8. The base module of claim 7, wherein the axes of said fittings are disposed at angles of substantially 90° relative to each other.

9. The base module of claim 7, wherein the axes of said fittings are disposed at angles of substantially 180° relative to each other.

10. The base module of claim 1, wherein said body and said communication module are separately molded components.

11. A base module for a filter assembly comprising:

a body defining a receptacle for receiving a filter cartridge and including a central opening;

a mounting bracket extending from said body for mounting said base module to a vehicle;

a communication module configured to be received in said central opening and comprising inlet and outlet conduits extending axially into said receptacle and corresponding inlet and outlet connectors extending axially away from said receptacle, said connectors being in fluid communication with said inlet and outlet conduits,

wherein said communication module is receivable in said central opening at a plurality of angular orientations to said body and fixable to said body at an angular orientation selected from said plurality of angular orientations.

12. The base module of claim 11, further comprising inlet and outlet fittings configured to mate with corresponding inlet and outlet connectors at an infinite variety of angular orientations to define a fluid passageways having axes which are not coaxial with said connectors.

13. The base module of claim 11, wherein said communication module is joined to said body by an ultrasonic weld.

14. The base module of claim 11, wherein said fittings are joined to said connectors by an ultrasonic weld.

15. The base module of claim 11, wherein at least one of said fittings has a substantially L shape.

16. The base module of claim 11, wherein the axes of said fittings are non-coaxial.

17. The base module of claim 16, wherein said axes of said fittings are disposed at angles of substantially 90° relative to each other.

18. The base module of claim 11, wherein said fittings have an enlarged throat at one end thereof, said throat enclosing end portions of said inlet and outlet connectors.

19. The base module of claim 18, wherein a sealing grommet is disposed between said throat and said connectors for sealing engagement therewith.

0928795-01694
F09T20-5025260

20. The base module of claim 11, wherein said body, said communication module and said fittings are separately molded components.

21. A method for manufacturing a base module for a filter cartridge, said base module having inlet and outlet fittings defining fluid passageways oriented at first and second angular positions relative to each other comprising:

- a) providing a communication module having inlet and outlet fittings;
- b) providing a body adapted to receive and mate with said communication module in a plurality of angular orientations to said communication module;
- c) mating said communication module to said body at an angular orientation selected from said plurality of angular orientations; and
- d) joining said communication module to said body.

22. The manufacturing method of claim 21, wherein said communication module includes a pair of integral, axially extending inlet and outlet connectors and said inlet and outlet fittings are separate components each adapted to mate with a corresponding connector in a plurality of angular orientations to said communication module, said manufacturing method further comprising;

- e) mounting said inlet fitting to said inlet connector at a first angular orientation selected from said plurality of angular orientations;
- f) joining said inlet fitting to said inlet connector;
- g) mounting said outlet fitting to said outlet connector at a second angular orientation selected from said plurality of angular orientations; and
- h) joining said outlet fitting to said outlet connector.

23. The manufacturing method of claim 21; wherein step d) comprises ultrasonic welding.

24. The manufacturing method of claim 22, wherein said first and second angular orientations are different.

25. The manufacturing method of claim 22, further comprising mounting a sealing ring between said fittings and said connectors.

26. The manufacturing method of claim 22, wherein steps d), f), and h) further comprise ultrasonic welding.

26. The manufacturing method of claim 20, wherein said inlet and outlet fittings are integral to said communication module and have a fixed angular orientation thereto.

27. The manufacturing method of claim 26, wherein said communication module defines an axis and said inlet and outlet fittings have axes which are not coaxial with said module axis.

0979293-024604